PSYCLONE

The Official Psyclone Users Guide
Written July 1989 By Mark Everingham

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SECTION 1

AN INTRODUCTION TO PSYCLONE

WHAT IS PSYCLONE?

Any C16 or Plus/4 user who has upgraded his set-up from cassette-recorder to disk-drive will undoubtedly wonder how he ever managed without. Commodore disk-drives are not well-known for their speed, indeed they *have* been called the "Lumbering Hippos" of the computer world, but even so, they are a huge improvement over tapes. The problem is that very little software is available on disk, and what does exist is very expensive - often as much as £5 more than the equivalent tape version. The answer is to transfer cassette-based programs to disk, but because of the non-Commodore tape loading systems in use today, this cannot be done simply by LOADing from tape and then SAVEing to disk. PSYCLONE is the solution to this problem.

Several loading systems are used by commercial software houses for C16 and Plus/4 software, but by far the most common one is NOVALOAD™ - a fast loading system developed several years ago by Novagen Software. The PSYCLONE program will transfer any reasonably well-behaved Novaload program from tape to disk. It runs on either a C16 or Plus/4 and will copy programs up to a full 64k. The program is compatible with any 1541-type disk-drive such as the 1551, Excelerator+™, Oceanic OC-118™ or Blue Chip™. PSYCLONE will also copy not just single-part programs, but copes fully with multi-part loaders and has a unique facility of deducing how you should go about executing individual programs after transfer to disk, for example, some you RUN and for some you must use a SYS command. The system has been kept compact and simple to use so that even someone who knows nothing more about his computer than how to type LOAD should be able to achieve a high transfer success rate. No tape-disk transfer program can claim the ability to copy *any* piece of software, but out of the 50 programs used to test PSYCLONE, it failed on only four - a success rate just over 90% which is surely impressive by any standards.

THE PHILOSOPHY BEHIND PSYCLONE

When I set about writing and releasing the PSYCLONE software, I had two thoughts in mind: (a) that the program should be efficient, elegant and useable, and (b) that it should be cheap enough for the C16 owner of any means to be able to afford. I hope I have satisfied these two aims.

(A) The major failing of most tape to disk transfer software is that by including too many fancy graphics, title screens or silly effects, the actual capability of the program is severely marred. I cite as examples the now deceased "Wand™" software and many of the copiers available for the CBM Amiga. If you are used to this type of software, PSYCLONE will probably come as a bit of a shock - no loading screen, no on-screen menus, and a start-up sequence involving a SYS command! The draft format of this manual may also have shocked you a little. The reasons are that I have striven to make PSYCLONE as powerful and usable as possible and concentrated on the ability of the program rather than special effects or artwork.

The Philosophy Behind PSYCLONE (Cont..)

(B) Sadly, at present, the decline of the C16 and Plus/4 computers seems to be ever accelerating, with fewer and fewer software houses producing software for the machines. In order to make the PSYCLONE software available to as many people as possible, instead of choosing a high price for the select few, we have chosen to price PSYCLONE at the price of just £2.95, a fact which I am sure drew you to the software, and a price which is far less than that of a commercial game. We have opted for a course of trusting you, the user, in that the disk is not protected, and the manual is surely easily photocopied. We hope that by the setting of such a low price, you will not feel the necessity to produce what are illegal copies of the program but will buy your own original copy. If you are reading a photocopied manual now, I hope that the standard of the program will convince you to buy your own.

PSYCLONE COPYRIGHT NOTICE & DISCLAIMER

Please do not simply skip this section, Software Piracy is a serious crime, and remember that if software production no longer becomes profitable because of the number of pirates, the software companies will cease to produce software.

Notice Concerning 1988 Copyright Act

> INTELLECT SOFTWARE neither authorizes nor condones the use of it's products to reproduce copyright material. It is illegal to make copies of such material without the expressed consent of the copyright owners or their licencees.

In plain English, I must stress that it *is* illegal for PSYCLONE to be used for the purpose of producing copies of software for distribution or re-sale. The program has been written to allow users to back-up original software which they have previously bought on tape and should not be used for any other use but this. It is your right to have one copy of your original software but no more. Please be responsible, and in the words of the Aegis Corporation, "Spread the word, *not* the disk!"

SECTION 2

GETTING STARTED

MAKING A BACKUP OF THE PSYCLONE SOFTWARE

Although it is not absolutely essential, and your PSYCLONE disk does include two protected copies of the PSYCLONE software, it is a good idea to make a backup of the software, just in case. In the event that you do lose your original, and don't have a backup copy, just send the disk back to us and we will replace it free of charge. However, the need for this can be avoided simply by copying the program onto another disk. Any disk will do, as the PSYCLONE program only takes up 2 blocks of disk-space. The process for copying the program is shown below:-

1. Reset your C16 or Plus/4
2. Insert your PSYCLONE system disk
3. Type MONITOR [Return]
4. Type L "PSYCLONE",8 [Return]
5. Insert your destination (copy) disk
6. Type S "PSYCLONE",8,055F,06EC [Return]
7. Type X [Return]

At this point, you should have a working back-up copy on your destination disk. It is very unlikely that you will ever need it, but accidents do happen. If you get into the habit of saving PSYCLONE program copies on your original PSYCLONE disk, as it is perfectly reasonable to do, it is wise to make a backup.

LOADING & INSTALLING THE PSYCLONE SOFTWARE

Getting the PSYCLONE program running from your original or backup disk is a simple procedure. To run the program, simply type the two commands below:-

```
LOAD "PSYCLONE",8,1 [Return]
SYS 1383            [Return]
```

The "READY." prompt will re-appear and your computer should behave as normal. In order to transfer a program from tape to disk, just put a Novaload program tape in your Datasette and type "LOAD" or whatever commands you usually have to type to load the program. The PSYCLONE software remains totally transparent to the BASIC operating system, with all the usual BASIC commands and functions working just as normal, so when you enter your LOAD command, the loading process goes on just as if PSYCLONE wasn't there. This is the secret of PSYCLONE, that the program being transferred to disk doesn't realize PSYCLONE is in memory.

One point to make for programmers is that because the PSYCLONE program resides in the function key and DMA workspace area, you should not use any disk commands or the KEY command between typing the SYS 1383 command and transferring a program. I cannot think of any situation in which this would cause problems.

SECTION 3

USING THE PSYCLONE SOFTWARE

THE PSYCLONE KEY COMMANDS

As mentioned before, when you type in LOAD and start your Datasette by pressing [PLAY], your chosen Novaload program loads just as normal. When one part of the program has been loaded, the tape will stop and the screen border will turn red.

At this point, you have five options, four of which are called into action by pressing a single function key:-

F1 - Copy this section of program to disk.
F2 - Copy the largest area of memory loaded so far to disk.
F3 - Archive a full 16k of memory to disk.
F7 - Archive a full 64k of memory to disk. (Plus/4)
[RETURN] - Return control to the program being loaded.

If you have absolutely no idea which key you should press, don't worry - it really is very simple. The exact function of each key is explained here.

Function Key F1 - Save This Section Only

If you only ever transfer single-part programs, like the majority of games, you will only ever have to use key F1. When a program is being loaded, PSYCLONE makes a note of where in memory the program starts, and where it finishes. When you push key F1, it saves onto disk the area of memory between the start and end points. For example, if the program starts at $0800 and ends at $3C00, PSYCLONE just saves the area $0800-$3C00. This intelligent function means that if only a short program is being loaded, it doesn't take up more space on your disk than is neccesary. The Plus/4 has a full 64k of memory but very few games programs take up more than 12k, so a lot of space is saved.

Function Key F2 - Save Largest Section Loaded

The function called into action with key F2 is used predominantly for copying multi-part programs. What I mean by a multi-part program is something like "Trailblazer", where the program loads a Loader Program, then some graphics, and finally the actual game, or any program which accesses the Datasette more than once. In the example of "Trailblazer", three sections of memory are loaded, approximately: $1000-$2000, $3C00-$4000 and $1000-$4000. If you were to push key F1 as soon as the tape stopped, only the area $1000-$1200 would be saved, so you'd lose the whole game! Waiting until the third section had loaded and then pressing key F2 would result in the block of memory between the lowest point ($1000) and the highest point ($4000) being saved. In this way you would get the whole program. If you press F2 after loading a single-part program, the key works just like key F1.

Function Keys F3 & F7 - Archive 16k/64k Memory

For some programs, function keys F1 and F2 may not save the correct area of memory, for instance when there are oddities in the loading system of the program being transferred to disk. In such

cases, pressing key F3 or F7 will save the whole memory of your computer from $0800 onwards. If you are loading a C16 program, push key F3 to save 16k of memory, or push key F7 to save 64k of memory when loading a Plus/4-only program. Usually this will not be necessary, but it is a useful feature for copying strange programs or for would-be hackers.

Key [RETURN] - Return Control To Program Being Loaded

Pressing [Return] performs two actions depending on the situation. If a program has finished loading, pressing [Return] runs the program just loaded. This means that you can load a game, copy it onto disk by pressing F1-F7 and then play and test the game straight away by pressing [Return].

If you are loading a multi-part program, pressing [Return] returns control to the program being loaded. Pressing [Return] after the first section has been loaded will result in the second section being loaded and so on. If all of the parts have been loaded, pressing [Return] results in the running of the program loaded.

Pressing [Return] to run a program being copied works whether the program is one executed with a RUN command or with a SYS command.

SAVING A PROGRAM COPY WITHIN PSYCLONE

When you press a key F1-F7, the screen border turns yellow and your disk-drive will begin to whirr. The section of the program you have chosen is then saved onto the disk in the drive. The process appears the same for all of keys F1-F7. When the section of memory has been saved, the border turns red again and PSYCLONE waits for your next keypress. If you were unsure how to save a program you could save it first by pressing F1, and then using F3 just in case you'd made the wrong choice the first time. When you've saved as many different disk versions as you like, just press [Return] to load the next section of the program or to start running it as explained before.

LOADING A PROGRAM SAVED BY PSYCLONE

When you have finished saving each part of the program you are transferring to disk, reset your computer and do a directory of the disk in your disk-drive using the normal "DIRECTORY [Return]" command. You should see a file with a name similar to those shown below:-

"CLONE NO.1 [RUN]"
or: "CLONE NO.1 $1000"

The "$1000" may be replaced by another hexadecimal number between $0000 and $FFFF. All files saved by PSYCLONE are given the name "CLONE NO." then the number of the section, No.1 if copying a single-part program, followed by the method used to the run the disk copy of the program. The method is either "[RUN]" or the hexadecimal address "$HHHH" which you call to run the program. I will explain the methods of loading for single and multi-part programs separately here for ease of understanding.

Running A Single-Part Program Of Type [RUN]

When you copy a single-part program there will be just one file saved on your disk. If this has the text "[RUN]" at the end of the name, the process for running the program is very simple. Just type:-

```
LOAD "CLONE NO.1 [RUN]",8,1 [Return]
RUN                         [Return]
```

This will load the program into memory from the disk and start execution of the program. This is the method which you will find to work for most commercial games software.

Running A Single-Part Program Of Type $HHHH

Many commercial programs cannot be executed by simple running, but must be started by calling the start of the machine-code program of which the program consists. If the program you have transferred to disk is of this type, it will be saved on your disk with the name followed by the text "$HHHH" where "HHHH" is the hexadecimal address you call to run the program. Programs of this type may be run in two ways. These are as follows:-

```
Method 1:    LOAD "CLONE NO.1 $HHHH" [Return]
             SYS DEC("HHHH")         [Return]

Method 2:    MONITOR                 [Return]
             L "CLONE NO.1 $HHHH",8  [Return]
             G HHHH                  [Return]
```

In both cases, you should substitute "HHHH" with the address shown at the end of the program name on your disk, for example, if the name were "CLONE NO.1 $1234" you would type 'LOAD "CLONE NO.1 $1234"' and 'SYS DEC("1234")'. If you find that the first method does not work, just try the second. Strictly, it is not absolutely neccesary to include the "$HHHH" in the file-name, it could be replaced by "*" or "??????". However, it is a good habit to get into to avoid confusions.

Running A Multi-Part Program Of Type [RUN]

Multi-part programs are a little more tricky because of the way they work. When transferring a multi-part program to disk, you will find sveral programs on your disk, numbered "CLONE NO.1", "CLONE NO.2", "CLONE NO.3" etc. up to the number of parts you have saved. In most cases, the method for running the program is as as follows:-

```
LOAD "CLONE NO.1 ?????",8,1 [Return]
LOAD "CLONE NO.2 ?????",8,1 [Return]
etc..
RUN                         [Return]
```

You can of course substitute "?????" with whatever follows the "CLONE NO.?" section, be it "[RUN]" or "$HHHH". As for single-part programs, this is not absolutely neccesary. You should load each of the parts before typing RUN, as shown earlier. The same procedure can be performed using the sequence below, if you find the above does not work.

Running A Multi-Part Program Of Type [RUN] (Cont..)

```
MONITOR                        [Return]
L "CLONE NO.1 ?????",8 [Return]
L "CLONE NO.2 ?????",8 [Return]
etc..
X                              [Return]
RUN                            [Return]
```

Running A Multi-Part Program Of Type $HHHH

Some multi-part programs may not be executed using RUN but must be called using a SYS command. The process for running is identical for a "[RUN]" program, but the RUN command should be replaced by a SYS to the "$HHHH" address shown at the end of one of the program sections. Try the address on the final section, and if this does not work, try the others. For example, assuming three parts with addresses $0800, $3C00 and $1200, use:-

Method 1:

```
LOAD "CLONE NO.1 $0800",8,1 [Return]
LOAD "CLONE NO.2 $3C00",8,1 [Return]
LOAD "CLONE NO.3 $1200",8,1 [Return]
SYS DEC("1200")             [Return]
```

Method 2:

```
MONITOR                        [Return]
L "CLONE NO.1 $0800",8         [Return]
L "CLONE NO.2 $3C00",8         [Return]
L "CLONE NO.3 $1200",8         [Return]
G 1200                         [Return]
```

The second method is simply an alternative method to the first. If you find the first method doesn't work, try the second.

ADDITIONAL NOTES ON MULTI-PART PROGRAMS

Multi-part programs are tricky to transfer to disk because they can work in so many ways. There are, however, two main types. The first type loads several sections of memory and then a program which you actually run, and the second loads a program which itself loads the other sections in turn and then runs the final resultant program itself. Evidently, this means two ways of getting the program running. As a general rule, you can execute the last section of program either by RUN or SYS as indicated in the name of the section saved onto disk. Sometimes programs may be labelled [RUN] but running the program doesn't have the desired effect. If you find a program like this, or typing the SYS indicated does not work, try typing 'SYS DEC("1000")' or "G 1000" when using method 2. For 9 out of 10 programs, this will do the trick!

In terms of multi-part loaders, I have tried to make PSYCLONE do as much of the hard work as possible, but obviously, if you have a little programming knowledge, even if only of BASIC, then you can improve the success rate greatly. If you can't get a multi-part program to run, try loading each section separately and listing it if possible then just look in the program for a SYS command. If you can find one, it is more than likely that this will run the program.

When saving multi-part programs, there are two methods - the first is to load all the parts by pressing [Return] after each and

then using key F2 to save the largest area of memory loaded. This is probably the most reliable method, but in some cases it may result in large amounts of disk space being used up unnecessarily. For instance, Commodore's game "Icicle Works" loads a section between $1000 and $4000, and then a section between $F800 and $FD00. If you were to press F2 after loading, the whole area between $4000 and $F800 would be saved when it is not actually used for anything. In these cases you could save each section separately with key F1 in order to conserve space on your disk. Additionally, some multi-part programs will cause the tape to stop, but will not allow PSYCLONE to run; "Icicle Works" is an example of this. If you find this happening, just push "[RUN/STOP]" and the border will turn red, calling PSYCLONE into action.

Remember, if using one PSYCLONE method to save or run a program doesn't appear to work, just try another one - you can't do any harm! If this section has sounded a little uncertain, don't worry, as most multi-part loaders can in fact be easily transferred to disk by the first method listed.

SECTION 4

RENAMING PSYCLONE DISK COPIES

Renaming Single-Part Programs

PSYCLONE automatically saves all its files onto disk using the standard "CLONE NO...." file-name to ensure that it does not try to save a program under a name which already exists on the disk, and also so that it can indicate to you how to run the program. When you have copied a program, you can always rename it to the name of your choice. For example:-

RENAME "CLONE NO.1 $1160" TO "SHOOT'EM'UP $1160" [Return]

It is a good idea to keep the address or "[RUN]" at the end of your new file-name as it is all too easy to forget how to run the program!

Renaming Multi-Part Programs

Because the loading process of multi-part programs is controlled manually by the user, each part of the program can in fact be given any name you like. However, I recommend that you keep some consistency in your file-names. Don't rename three parts of a program as "PART1", "SECTION2" and "DIVISION3", but use names something like those below.

RENAME "CLONE NO.1 $1000" TO "SHOOTEMUP1.$1000" [Return]
RENAME "CLONE NO.2 $2000" TO "SHOOTEMUP2.$2000" [Return]
RENAME "CLONE NO.3 $3000" TO "SHOOTEMUP3.$3000" [Return]

If you have enough characters left in your file-name (maximum length 16 characters), it is also a good idea to identify the part of the program you execute, for instance by appending a symbol to the end of the file-name.

SECTION 5

EXAMPLES OF PROGRAM TRANSFERS

EXAMPLES OF COPYING SINGLE AND MULTI-PART PROGRAMS

I hope I have made my explanations of how to transfer and reload programs as easy to understand as possible, but just in case you are still a bit confused, for the process can be a bit hard to understand in the case of multi-part programs, I include two step-by-step examples here showing the process for copying each type of program. These processes will be entirely adequate for the vast majority of programs.

Single-Part Program Example: STARFORCE NOVA (Mastertronic)

```
1. LOAD "PSYCLONE",8,1            [Return]
2. SYS 1383                       [Return]
3. LOAD                           [Return]
4. Push Key F1 At Red Border
5. Reset Computer
6. LOAD "CLONE NO.1 $1160",8,1 [Return]
7. SYS DEC("1160")                [Return]
```

Multi-Part Program Example: ICICLE WORKS (Commodore)

```
1. LOAD "PSYCLONE",8,1            [Return]
2. SYS 1383                       [Return]
3. LOAD                           [Return]
4. Push [Return] At Red Border
5. Push Key F1 At Red Border
6. Push [Return]
7. Push [RUN/STOP] Then Key F1 At Red Border
8. Reset Computer
9. LOAD "CLONE NO.1 [RUN]",8,1 [Return]
10. LOAD "CLONE NO.2 [RUN]",8,1 [Return]
11. SYS DEC("1000")               [Return]
```

APPENDIX A

PSYCLONE QUICK REMINDER SHEET

LOADING & INSTALLING THE PSYCLONE SOFTWARE

```
Type:      LOAD "PSYCLONE",8,1 [Return]
           SYS 1393            [Return]
```

THE PSYCLONE SOFTWARE KEY COMMANDS

```
Type:      F1 - Copy This Section Of Program To Disk
           F2 - Copy The Largest Area Of Memory Loaded So Far To Disk
           F3 - Archive A Full 16k Of Memory To Disk
           F7 - Archive A Full 64k Of Memory To Disk
    [Return] - Return Control To The Program Being Loaded
```

RUNNING DISK COPIES SAVED BY PSYCLONE

```
Single-Part [RUN]:        LOAD "CLONE NO.1 [RUN]",8,1 [Return]
                          RUN                         [Return]

Single-Part $HHHH:        LOAD "CLONE NO.1 $HHHH",8,1 [Return]
                          SYS DEC("HHHH")             [Return]

                     or:  MONITOR                     [Return]
                          L "CLONE NO.1 $HHHH",8      [Return]
                          G HHHH                      [Return]

Multi-Part [RUN]:         LOAD "CLONE NO.1 ?????",8,1 [Return]
                          LOAD "CLONE NO.2 ?????",8,1 [Return]
                          etc..
                          RUN                         [Return]

                     or:  MONITOR                     [Return]
                          L "CLONE NO.1 ?????",8      [Return]
                          L "CLONE NO.2 ?????",8      [Return]
                          X                           [Return]
                          RUN                         [Return]

Multi-Part $HHHH:         LOAD "CLONE NO.1 ?????",8,1 [Return]
                          LOAD "CLONE NO.2 ?????",8,1 [Return]
                          SYS DEC("HHHH")             [Return]

                     or:  MONITOR                     [Return]
                          L "CLONE NO.1 ?????",8      [Return]
                          L "CLONE NO.2 ?????",8      [Return]
                          G HHHH                      [Return]
```

RENAMING PROGRAM COPIES SAVED BY PSYCLONE

```
Single-Part:   RENAME "CLONE NO.1 ?????" TO "<FILENAME> ?????"

Multi-Part:    RENAME "CLONE NO.1 ?????" TO "<FILENAME>1 ?????"
               RENAME "CLONE NO.2 ?????" TO "<FILENAME>2 ?????"
               etc..
```

APPENDIX B

PSYCLONE CREDITS & ACKNOWLEDGEMENTS

PROGRAM & DEVELOPMENT CREDITS

The PSYCLONE program was written in April-June 1989 By Mark Everingham of INTELLECT.

This manual was produced using an Amiga A500 running KindWords V1.2 and NotePad V2.2.

Thanks go to Paul Dias for providing test software, development work and constructive criticism.

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PSYCLONE QUESTIONS, REQUESTS, COMPLAINTS OR ADVICE...

If you have any comments, questions, problems, or hopefully praise concerning PSYCLONE or any C16 or Plus/4 matter, please write to the address below. If you require help on any C16 or Plus/4 subject other than PSYCLONE, please enclose an S.A.E.

Write to: INTELLECT Software
17 Collingwood Road
Redland
Bristol BS6 6PD

We would also like to make readers aware that INTELLECT's other product for the Plus/4 computer only, the RAP4 sound-sampler, is still available for a limited period. The package is now available at the reduced price of £8.95 on disk including a full 72-page manual. The package received a pleasing review in the November'88 issue of CCI. For a copy of this review and further details, please write to the address above. The package can be purchased from the same address by enclosing a cheque or P.O' for £8.95 inc. made out to INTELLECT SOFTWARE. For overseas orders, please write first for details.